REMARKS/ARGUMENTS

Claims 3-8, 10-17, 20-25, 27-34, 37-42, and 44-51 are pending in the present application. Claims 3-8, 20, 21, 23-25, 37, 38, and 40-42 are amended. Support for the amendments to the claims may be found in the Specification on at least page 28, line 9 – page 29, line 22 and associated Figure 4, steps 402-412. Claims 52-54 are added. Support for the newly added claims may be found in the Specification on at least page 26, line 19 – page 27, line 17, page 29, lines 17-20, and Figure 4, step 408. Reconsideration of the claims is respectfully requested.

I. Telephonic Interview with Examiner Osman on August 8, 2007

Applicants thank Examiner Ramy Osman for the courtesy extended to Applicants' representative during the August 8, 2007 telephonic interview. During the teleconference, the Examiner and Applicants' representative discussed amending the independent claims to further distinguish the present invention from the cited prior art references. Examiner Osman appeared to indicate that the amended independent claim language contained in this Response to Office Action would overcome the cited prior art references because the claims now recite a "chronological sequence" as recommended by Examiner Osman. Therefore, it is Applicants' representative's understanding that barring additional materially relevant prior art being found in an updated search by Examiner Osman, the present claims are now in condition for allowance. The substance of the interview, as well as additional reasons that the claims are not unpatentable, is summarized in the remarks of Sections II-IV, which follow below.

II. 35 U.S.C. § 103, Obviousness, Claims 3, 5, 20, and 37

The Examiner rejects claims 3, 5, 20, and 37 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Intel Corporation, *Preboot Execution Environment (PXE) Specification*, Sept. 20, 1999 ("Intel") in view of *Yoshida et al.*, U.S. Patent No. 6,401,121 ("Yoshida"). This rejection is respectfully traversed.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). For an invention to be *prima facie* obvious, the prior art must teach or suggest all claim limitations. *In re Royka,* 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). In this case, the Examiner has not met this burden because all of the recited features of these claims are not found in the cited prior art references as believed by the Examiner. Therefore, the combination of Intel and Yoshida will not reach the presently claimed invention recited in these claims.

Amended independent claim 3 of the present invention, which is representative of amended independent claims 20 and 37 with regard to similarly recited subject matter, reads as follows:

> 3. A method within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:
>
> determining whether or not the server device is able to service an additional boot request;
>
> receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client device on the network; and
>
> responsive first to determining that the server device is able to service an additional boot request and second to receiving at the server device the boot request from the client device, sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device.

With regard to claim 3, the Examiner states:

> In reference to claim 3, 20 and 37; Intel teaches a method, an apparatus and a computer program product for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:
>
> receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client on the network (see pages 12-14, step 5 and Figure 2-1, step 5);
>
> in response to a determination that the server device is able to service an additional boot request, sending a boot response to the client device, wherein the boot response to the client device to download boot files from the server device (see pages 12-14, steps 6&7 and Figure 2-1, steps 6&7).
>
> Intel fails to explicitly teach determining whether or not the server device is able to service an additional boot request. However, Yoshida teaches prior to sending a server response to a client device, determining that the server device has sufficient resources to service a request for an additional client device (Abstract and Summary). It would have been obvious for one of ordinary skill in the art to modify Intel by defining an available boot server as a server with sufficient resources as per the teachings of Yoshida so server loads can be distributed and prevent server overload (i.e. exceeded load capacity).

Final Office Action dated July 2, 2007, pages 3-4, item 6.

Applicants agree with the Examiner that "Intel fails to explicitly teach determining whether or not the server device is able to service an additional boot request." Final Office Action dated July 2, 2007, page 3, first sentence of last paragraph. Therefore, Intel does not teach or suggest this recited claim 3 feature. Because Intel does not teach or suggest "determining whether or not the server device is able to service an additional boot request," Intel cannot teach or suggest that in response to determining that the server device is able to service an additional boot request, a boot response is sent to the client device as further recited in claim 3. Consequently, Intel does not teach or suggest these recited claim 3 features.

Yoshida fails to cure the deficiencies of the Intel reference. Yoshida teaches a method in a load distribution system that utilizes a control server. The control server receives a client transmission request and determines which transmission server within a plurality of transmission servers has the smallest transmitted data count or the smallest bandwidth sum. Then, the control server directs the client transmission request to the transmission server that is determined to have the smallest transmitted data count or bandwidth sum. Yoshida, column 2, lines 6-27. In other words, Yoshida teaches that the control server determines whether the other transmission servers in the network are able to service additional client requests. Moreover, Yoshida does not teach or suggest that the control server services any client requests.

In contrast, claim 3 recites, "A method within a server device for…determining whether or not the server device is able to service an additional boot request." In other words, the server device, itself, makes the determination as to whether or not it is able to service an additional boot request as recited in claim 3. However, the method of Yoshida teaches that the control server makes the determination as to which transmission server within the plurality of transmission servers is able to service a client request.

The Examiner cites the Abstract and Summary of the Yoshida reference as teaching determining whether or not the server device is able to service an additional boot request. Final Office Action dated July 2, 2007, page 3, second sentence of last paragraph. These Examiner-cited sections read as follows:

> A load distribution system includes a plurality of servers, each having a memory device in which are stored a plurality of data files for transmission to a plurality of client stations, and a control server which is connected to the plurality of servers for controlling the distribution of transmission requests from client stations as loads on the servers by acquiring transmission counts for data files that are transmitted by the plurality of servers, and determining which server should respond to a transmission request as a data transmission server based on which server has a transmitted data count which is the smallest.
>
> This invention solves the above-described problems. It is one object of the invention to provide a load distribution system for a plurality of servers whereby the loads placed on CPUs and networks, and the number of disk accesses or the loads placed on the disk-accessing capacities of the servers are distributed. It is another object of the invention to provide a method for load distribution over a plurality of servers to eliminate the problems encountered with the conventional systems.
>
> A load distribution system according to one aspect of the invention comprises a plurality of servers, each having a memory device which stores data sets, for transmitting the data sets to a plurality of client stations; and a control server connected to the plurality of servers, the control server including a calculation device for acquiring a count of data sets that are transmitted by the plurality of servers, and a determination device for receiving transmission requests from the plurality of client stations, and for selecting, as a data transmission server, that server for which a transmitted data set count, which is acquired by the calculation device, is smallest among all the servers.

> A load distribution system according to another aspect of the invention comprises a control server which includes a calculation device for calculating bandwidths that indicate a bit count per unit of time for data that are transmitted by each of the plurality of servers, and a determination device for receiving from the client stations transmission requests for the data, and for selecting, as a data transmission server, that server which has, for the bandwidths that are acquired by the calculation device, a sum that is smallest among all the servers.
>
> According to yet another aspect of the invention, a load distribution method for a plurality of data servers includes a calculation step of acquiring counts of data that are transmitted by the servers to client stations, and a decision step of receiving transmission requests for the data from the client stations, and selecting as a data transmission server that server for which a count of data that are transmitted is smallest.
>
> A load distribution method according to still another aspect of the invention comprises a calculation step of acquiring bandwidths that each indicate a bit count per unit of time for data that are transmitted to client stations by a plurality of servers, and a decision step of receiving transmission requests for the data from the client stations, and selecting, as a data transmission server, a server that has a bandwidth sum that is smallest.
>
> Other objects and advantages of this invention will become apparent from the detailed description given hereinafter. It should be understood, however, that the detailed description and specific embodiment are given by way of illustration only since various changes and modifications within the spirit and scope of the invention will become apparent to the those skilled in the art from this detailed description.

Yoshida, Abstract and Summary, respectively.

As is evident from the sections above, Yoshida is directed to a load distribution system that includes a plurality of servers, each server having a memory device in which are stored a plurality of data files for transmission to a plurality of client stations. The method of Yoshida has a control server which is connected to the plurality of servers for controlling the distribution of transmission requests from client stations as loads on the servers by acquiring transmission counts for data files that are transmitted by the plurality of servers. The control server determines which transmission server should respond to a transmission request based on which transmission server has the smallest transmitted data count or bandwidth sum.

Yoshida further teaches that a control server and a load distribution processing program determine which of video servers 1 and 2 can fulfill a video service request from client stations. A video server management table stores data concerning various parameters of video servers 1 and 2. A client management table stores data concerning various parameters of client stations. The load distribution processing program performs load distribution processing to select the optimal video server 1 or 2 consonant with the input data. In consonance with the input data the control server and the load distribution processing program determine the optimal video server 1 or 2 for processing the video request using the current operational states of the video servers 1 and 2 and data concerning the requested video file that are obtained by the load distribution program. Then the control server and a load

distribution processing program indicate the optimal video server in output data. The load distribution processing program thus functions to calculate and determine the optimal video server based on the content of the input data, the video server management table, and the client management table. Yoshida, column 3, lines 40-67.

The control server and a load distribution processing program use maximum transmission counts of the video servers; current transmissions by the video servers; maximum bandwidths of the video servers; bandwidths being employed by the video servers for the current transmission; total disk capacities of the video servers; and maximum simultaneous transmission counts for the files of the video servers to determines which video server to select. Yoshida, column 4, lines 7-22.

Thus, Yoshida merely teaches that the control server determines which of a set of video servers is able to fulfill a video service request based on maximum transmission counts; current transmissions; maximum bandwidth; bandwidths being employed for current transmissions; total disk capacities; and maximum simultaneous transmission counts to determines which video server to select. In contradistinction, claim 3 recites a method within a server device for determining whether or not the server device is able to service an additional boot request. Yoshida does not teach or suggest that a video server determines whether or not the video server is able to service an additional boot request, but instead teaches that the control server determines which video server will fulfill the request. As a result, the video server services any request sent to it by the control server as taught by the method of Yoshida. Therefore, Yoshida does not teach or suggest "[a] method within a server device for…determining whether or not the server device is able to service an additional boot request" as recited in claim 3.

Moreover, claim 3 further recites "responsive first to determining that the server device is able to service an additional boot request and second to receiving at the server device the boot request from the client device, sending a boot response to the client device." In other words, the server first determines whether the server is able to service another boot request prior to receiving another boot request from a client. Yoshida instead teaches that the control server first receives a client request and then the control server determines which transmission server to send the request to for servicing. Yoshida does not teach or suggest that the control server first determines whether the transmission server is able to service another request prior to receiving the request. Therefore, Yoshida does not teach or suggest this above-recited claim 3 feature either.

Because neither Intel nor Yoshida teach or suggest "determining whether or not the server device is able to service an additional boot request" and "responsive first to determining that the server device is able to service an additional boot request and second to receiving at the server device the boot request from the client device, sending a boot response to the client device" as recited in amended claim 3, the combination of Intel and Yoshida cannot teach these recited features. As a result, the combination of

Intel and Yoshida does not teach or suggest all features recited in amended claim 3 of the present invention. Accordingly, the rejection of independent claims 3, 20, and 37 as being unpatentable over Intel in view of Yoshida has been overcome.

In view of the arguments above, amended independent claims 3, 20, and 37 are in condition for allowance. Claim 5 is a dependent claim depending on independent claim 3. Consequently, claim 5 also is allowable, at least by virtue of its dependence on an allowable claim. Therefore, the rejection of claims 3, 5, 20, and 37 under 35 U.S.C. § 103(a) has been overcome.

III. <u>35 U.S.C. § 103, Obviousness, Claims 4, 21, and 38</u>

The Examiner rejects dependent claims 4, 21, and 38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Intel in view of Yoshida in further in view of Microsoft Corporation, *Description of PXE Interaction Among PXE Client, DHCP, and RIS Server*, Dec. 29, 1999 ("Microsoft"). This rejection is respectfully traversed.

As shown in Section II above, the combination of Intel and Yoshida does not teach or suggest all claim limitations as recited in amended independent claims 3, 20, and 37 of the present invention. In particular, the combination of Intel and Yoshida does not teach or suggest "determining whether or not the server device is able to service an additional boot request" and "responsive first to determining that the server device is able to service an additional boot request and second to receiving at the server device the boot request from the client device, sending a boot response to the client device" as recited in amended independent claims 3, 20, and 37. These features also are not taught or suggested by the Microsoft reference nor does the Examiner cite to any section of the Microsoft reference that allegedly does so. The Examiner only relies on the Microsoft reference as disclosing that a PXE boot server and a DHCP server reside within the same server. Final Office Action dated July 2, 2007, page 4, item 9, last paragraph. Therefore, the Microsoft reference fails to cure the deficiencies of the Intel and Yoshida references.

Because Intel, Yoshida, and Microsoft do not teach or suggest "determining whether or not the server device is able to service an additional boot request" and "responsive first to determining that the server device is able to service an additional boot request and second to receiving at the server device the boot request from the client device, sending a boot response to the client device" as recited in amended independent claims 3, 20, and 37, the combination of Intel, Yoshida, and Microsoft cannot teach or suggest these recited features. As a result, the combination of Intel, Yoshida, and Microsoft does not teach or suggest all features recited in amended independent claims 3, 20, and 37 of the present invention. In view of the arguments above, amended independent claims 3, 20, and 37 are in condition for allowance. Claims 4, 21, and 38 are dependent claims depending on independent claims 3, 20, and 37, respectively. Consequently, dependent claims 4, 21, and 38 of the present invention also are allowable at least by virtue

of their dependence upon allowable claims. Accordingly, the rejection of dependent claims 4, 21, and 38 as being unpatentable over Intel in view of Yoshida in further in view of Microsoft has been overcome.

IV. <u>35 U.S.C. § 103, Obviousness, Claims 6-8, 10-17, 22-25, 27-34, 39-42, and 44-51</u>

The Examiner rejects claims 6-8, 10-17, 22-25, 27-34, 39-42, and 44-51 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Intel in view of Microsoft in view of Yoshida. This rejection is respectfully traversed.

As shown in Section III above, the combination of Intel, Yoshida, and Microsoft does not teach or suggest all claim limitations as recited in amended independent claims 3, 20, and 37 of the present invention. In particular, the combination of Intel, Yoshida, and Microsoft does not teach or suggest "determining whether or not the server device is able to service an additional boot request" and "responsive first to determining that the server device is able to service an additional boot request and second to receiving at the server device the boot request from the client device, sending a boot response to the client device" as recited in amended independent claims 3, 20, and 37. Amended independent claims 3, 20, and 37 are representative of amended independent claims 6, 23, and 40 with regard to similarly recited subject matter. Therefore, the combination of Intel, Yoshida, and Microsoft does not teach or suggest all claim limitations as recited in amended independent claims 6, 23, and 40 of the present invention.

In view of the arguments above, amended independent claims 3, 6, 20, 23, 37, and 40 are in condition for allowance. Claims 7, 8, 10-17, 22, 24, 25, 27-34, 39, 41, 42, and 44-51 are dependent claims depending on independent claims 6, 20, 23, 37, and 40, respectively. Consequently, dependent claims 7, 8, 10-17, 22, 24, 25, 27-34, 39, 41, 42, and 44-51 of the present invention also are allowable at least by virtue of their dependence upon allowable claims. Accordingly, the rejection of claims 6-8, 10-17, 22-25, 27-34, 39-42, and 44-51as being unpatentable over Intel in view of Microsoft in view of Yoshida has been overcome.

V. <u>Added Claims 52-54</u>

This Response to Final Office Action adds dependent claims 52-54. Newly added claims 52-54 are allowable at least by virtue of their dependence upon allowable independent claims 3 and 6. Furthermore, these dependent claims also contain additional features not taught or suggested by the cited prior art references used to reject the claims above.

For example, added dependent claim 52 of the present invention, which is representative of added dependent claim 54, reads as follows:

> 52. The method of claim 3, wherein the determining step is performed in each of the plurality of boot servers on the network.

As shown in Sections II, III, and IV above, the combination of Intel, Yoshida, and Microsoft does not teach or suggest determining whether or not the server device is able to service an additional boot request as recited in amended independent claims 3 and 6. Because the combination of Intel, Yoshida, and Microsoft does not teach or suggest determining whether or not the server device is able to service an additional boot request as recited in amended independent claims 3 and 6, the combination of Intel, Yoshida, and Microsoft cannot teach or suggest the determining step is performed in each of the plurality of boot servers on the network as recited in added dependent claims 52 and 54.

Even if, for the sake of argument, Yoshida teaches a method within a server device for determining whether or not the server device is able to service an additional boot request, which it does not, Yoshida does not teach or suggest that each of the plurality of boot servers on the network determines whether or not it is able to service an additional boot request. Yoshida instead teaches that a control server receives a client transmission request, determines which transmission server within the plurality of transmission servers has the smallest transmitted data count or the smallest bandwidth sum, and then directs the client transmission request to the transmission server that has the smallest transmitted data count or bandwidth sum for servicing. Yoshida, column 2, lines 6-27. In other words, Yoshida teaches that the control server makes the determination for all of the plurality of transmission servers within the network. Yoshida makes no reference to each of the plurality of transmission servers making the determination as to whether each of the plurality of transmission servers are able to service an additional client transmission request. The Intel and Microsoft references fail to cure the deficiencies of the Yoshida reference. Therefore, the combination of Intel, Yoshida, and Microsoft does not teach or suggest the features recited in added dependent claims 52 and 54.

As a further example, added dependent claim 53of the present invention reads as follows:

> 53. The method of claim 3, further comprising:
>
> responsive to determining that the server device is not able to service an additional boot request, suspending acceptance of additional boot requests from any client device on the network.

As shown in Sections II, III, and IV above, the combination of Intel, Yoshida, and Microsoft does not teach or suggest determining whether or not the server device is able to service an additional boot request as recited in amended independent claim 3. Because the combination of Intel, Yoshida, and Microsoft does not teach or suggest determining whether or not the server device is able to service an additional boot request as recited in amended independent claim 3, the combination of Intel, Yoshida, and Microsoft cannot teach or suggest that in response to determining that the server device is not able to

service an additional boot request, acceptance of additional boot requests are suspended from any client device on the network as recited in added dependent claim 53.

Even if, for the sake of argument, Yoshida teaches a method within a server device for determining whether or not the server device is able to service an additional boot request, which it does not, Yoshida does not teach or suggest that in response to determining that the server device is not able to service an additional boot request, acceptance of new boot requests are suspended from any client device on the network. Yoshida instead teaches that the control server first receives a client request and then determines which transmission server is to service the request. Yoshida, column 2, lines 6-27. Yoshida makes no reference to the control server first determining whether or not the transmission server is able to service an additional client request prior to receiving the client request. Therefore, the combination of Intel, Yoshida, and Microsoft does not teach or suggest the recited feature in added dependent claim 53.

VI. Conclusion

It is respectfully urged that the subject application is patentable over the cited prior art of references and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: September 18, 2007

Respectfully submitted,

/Peter B. Manzo/

Peter B. Manzo
Reg. No. 54,700
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 385-8777
Attorney for Applicants